



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,139	03/19/2001	Bartlett Scott Hudson Michel	D-427A	7587
43499 7590 08/04/2008 THE AEROSPACE CORPORATION 2350 EAST EL SEGUNDO BOULEVARD MAIL STOP MI/040 EL SEGUNDO, CA 90245				
EXAMINER				
DIVECHA, KAMAL B				
ART UNIT		PAPER NUMBER		
2151				
MAIL DATE		DELIVERY MODE		
08/04/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

09/812,139

Applicant(s)HUDSON MICHEL, BARTLETT
SCOTT**Examiner**

KAMAL B. DIVECHA

Art Unit

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Action is in response to communications filed 4/14/08.

Claims 1-20 are pending in this application.

Claim 5 was previously cancelled.

Response to Arguments

Applicant's arguments filed 4/14/08 have been fully considered but they are not persuasive.

In response filed, applicant argues in substance that:

- a. The examiner has simply taken isolated features and combined them based upon forbidden hindsight reconstruction (remarks, pg. 14-15).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

- b. Both Jordan and Garcia do not communicate tri-referenced routing information and both particularly do not communicate the originating URL (remarks, pg. 15).

In response to argument [b], Examiner disagrees.

Jordan explicitly teaches the process of transmitting the routing information (such as source address, destination address, forwarding address, next hop address: as disclosed in the request) to an arbitrary cache or destination upon a cache miss, wherein a new entry is created for the object in a caching table, a routing or forwarding table (col. 6 L50-67 and fig. 2a).

The request includes tri-reference information, more specifically, the originating URL.

- c. The examination's inability to recognize the invention, led the applicant to assist the examiner though the inclusion of claims 19 and 20 wherein the tri-referenced routing information is actually used to build routing tables (remarks, pg. 15).

In response to argument [c], Applicant should note the following:

During patent examination, the pending claims must be “given their broadest reasonable interpretation consistent with the specification.” >The Federal Circuit’s en banc decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the “broadest reasonable interpretation” standard:

The Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367

F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must “conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.” 37 CFR 1.75(d)(1). 415 F.3d at 1316, 75 USPQ2d at 1329. See also< In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

d. Other systems do have caches, but do not broadcast tri-referenced associated routing information (remarks, pg. 19 lines 6-10, pg. 22 lines 24-27).

In response to argument [d], Examiner respectfully disagrees because initially, and as stated in the previous office actions, the “tri-reference routing information are not recited in the claims”.

Applicant should note that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 1 simply associates the source IPA and the originating URL, and transmits this information.

Moreover, the term "broadcasting" appears in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

e. Jordan does not solve the problem of migrating forwarding tables from one cache to another, nor uses the solution of transmitting routing information associating a URL-id with a source IPA of the source storing the URL-id web content data so as to migrate the forward and routing table about the cooperative caches (remarks, pg. 22 lines 4-15).

In response to argument [e], Examiner respectfully disagrees.

First, the context of the claim fails to disclose, teach, suggest or event hint the process of **migrating forwarding tables from one cache to another**, nor it uses the solution of transmitting routing information associating a URL-id with a source IPA of the source storing the URL-id web content data so as to migrate the forward and routing table about the cooperative caches.

In other words, the features upon which applicant relies (as in argument a) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

On the other hand, Jordan explicitly teaches the process of **transmitting the routing information** (such as source address, destination address, forwarding address, next hop address: as disclosed in the request) to an arbitrary cache or destination upon a cache miss, wherein the a new entry is created for the object in a caching table, a routing or forwarding table (col. 6 L50-67 and fig. 2a).

- f. Jordan does not teach a method of broadcasting an association of a source with a URL to an arbitrary destination that can then reconstruct and maintain a routing and forwarding tables (remarks, pg. 23 lines 16-23).

In response to argument [f], Examiner disagrees.

Applicant acknowledges, e.g. remarks, pg. 23 lines 9-12, that “the request contains an **association between the requesting IPA and the URL of the originator...**”

In other words, the request as in Jordan includes the association of a source with a URL to an arbitrary destination because the request includes destination address, source address, URL, etc.

- g. However, the caching table is not maintained by virtue of receiving unilateral broadcast tri-referenced associated routing information (remarks, pg. 25 lines 1-12).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., receiving unilateral broadcast tri-referenced associated routing information) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It appears that applicant is reading limitations from the specification into the claims.

h. The polling in Jordan is a bilateral communication and not a unilateral communication...(remarks, pg. 26 lines 15-28, pg. 28 lines 12-28).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., unilateral communication) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

i. The examination states that Jordan's request includes source address...(remarks, pg. 29 lines 13-28, pg. 31 lines 9-28).

Applicant is advised not to rely on the same terminologies for the comparison of the prior art.

Examiner, in the previous office action, e.g. pg. 7, indicated to refer to cited prior art section for these inherent teachings. However, applicant failed to do and relied on the search of specification for the inherent features.

Applicant is advised to refer to PRIOR ART, more specifically, IMAI, fig. 2 that shows a request and its parameters including various routing information.

For the at least these reasons, THE REJECTION IS MAINTAINED.

Furthermore, in response filed, **applicant acknowledges the following:**

- Claim 1 claims a broadcasting method and not the creation of forwarding tables as now claimed in new claims 19 and 20 (remarks, pg. 18 lines 20-23).
- Other systems do have caches, and do have forwarding tables, and do have routing tables (remarks, pg. 19 lines 6-9).
- Jordan does maintain a caching table, which can be used to forward URL requests (remarks, pg. 25 lines 1-12).
- A caching table points directly to alternative source caches having stored data (remarks, pg. 25 lines 27-28).
- For maintaining the caching table, Jordans information may include URL requests, the requestor, and the destination (remarks, pg. 27).
- Jordan bilaterally multicasts bi-referenced information to maintain caching tables (remarks, pg. 28).

Terminal Disclaimer

The terminal disclaimer filed on October 11, 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on application number 09/810,303 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4, 6, 8, 9, 11, 12, and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan et al. (hereinafter Jordan, US Patent No. 6,438,652 B1) in view of Garcia-Luna-Aceves et al. (hereinafter Garcia, US 6,836,463 B2).

As per claim 8, Jordan discloses a method of transmitting from a proximal cache at a proximal IPA a routing information for indicating a distal cache storing web content data associated with a URL of a web server permanently storing the web content data, the proximal web cache is a first one of the plurality of cooperative web caches (fig. 1a, col. 2 L4-39, col. 3 L19-41), the method comprising:

- generating at the proximal IPA a URL identifier for indicating the web content data of the URL stored in the distal web cache (col. 5 L25 to col. 6 L66; updating the caching table with new object id, col. 8 L37 to col. 9 L45);
- generating at the proximal IPA the proximal IPA for indicating the location of the proximal cache (col. 6 L50 to col. 7 L35, col. 8 L37 to col. 9 L45: multicast message comprises an originating address, i.e. source address),

- generating at the proximal IPA a destination IPA for indicating a destination cache (col. 6 L50 to col. 7 L35, col. 8 L37 to col. 9 L45: a multicast message also includes a destination address),

- associating at the proximal IPA the proximal IPA and the URL identifier as the routing information (col. 6 L50 to col. 7 L35, col. 8 L37 to col. 9 L45: multicast message), and

- transmitting the routing information from the proximal cache at the proximal IPA to the destination cache at a destination IPA, the transmitting of the routing information associates the sourcing IPA, the originating URL with the destination IPA (col. 6 L50 to col. 67 L65, col. 8 L37 to col. 9 L45: multicasting a message to all other cache servers indicating new ownership, i.e. new routing information).

However, Jordan does not disclose the process of broadcasting the routing information from proximal cache and the process of generating at the proximal IPA a distance metric for indicating a web hop distance of any number of the plurality of web hops through which the data would be communicated from the source to the destination.

Garcia explicitly discloses the process of broadcasting the routing update message for updating the routing information (col. 9 L40-50: the routing message is broadcast, col. 10 L24-50) and the process of generating the distance metric for indicating a web hop distance of any number of the plurality of web hops through which the data would be communicated from the source to the destination (col. 5 L36 to col. 6 L16, col. 7 L55 to col. 8 L67, col. 10 L56 to col. 11 L64: Information exchanged in routing protocol such as network addresses, cost, usage of distance metric).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Jordan in view of Garcia in order to generate at the proximal IPA a distance metric for indicating a web hop distance through which the data, i.e. content would be communicated from the source to the destination and broadcast the update message using the routing protocol.

One of ordinary skilled in the art would have been motivated because it would have enabled reporting the changes to the routing table (Garcia: col. 5 L51-59).

As per claim 6, Jordan discloses the process wherein the source is a web server distally and permanently storing the web content and the sourcing IPA is a web server IPA indicating the IPA location of the web server (fig. 1A, fig. 1B and col. 3 L18-50).

As per claim 9, Jordan in view of Garcia discloses the process wherein the distance metric is greater than one indicating a number greater than one of the number of web hops between the destination caches through the proximal cache to the distal cache storing the web content data (Garcia: col. 5 L36 to col. 6 L16, col. 7 L55 to col. 8 L67, col. 10 L56 to col. 11 L64). Motivation to combine set forth in claim 1.

As per claim 11, Jordan in view of Garcia discloses the process of repeating the URL identifier generating step, proximal IPA generating step, distance generating step, associating step, a plurality of times for generating a plurality of routing items each comprising a url and a distance metric, and incorporating the plurality of routing items within protocol data structure within a routing packet prior to the transmitting step, the routing protocol packet comprising url and distance metric and proximal and destination IPA (Jordan, col. 9 L4-45, col. 10 L15-58 and

Garcia: col. 5 L36 to col. 6 L16, col. 7 L55 to col. 8 L67, col. 10 L56 to col. 11 L64). Motivation to combine set forth in claim 1.

As per claim 15, Jordan in view of Garcia discloses the process wherein the storing steps created a routing table for cross referencing the plurality of URL identifiers to the plurality of distance metrics and to one or more cooperative web caches of the cooperative web caches, the one or more cooperative web caches for routing URL identifiers to distal web caches storing the web content of the respective plurality if URL identifiers (Jordan, col. 8 L40-67, col. 9 L10-21; Garcia: col. 5 L36 to col. 6 L16, col. 7 L55 to col. 8 L67, col. 10 L56 to col. 11 L64). Motivation to combine set forth in claim 1.

As per claim 16, Jordan discloses the process wherein the proximal cache and the one or more cooperative web caches being within a local group of cooperative web caches (fig. 1a, fig. 1b and col. 3 L19-41).

As per claim 17, Jordan discloses the process wherein the proximal cache is within one or more local groups of cooperative web caches (fig. 1a-fig.1b and col. 3 L19-41).

As per claim 19, Jordan in view of Garcia discloses the process of storing in the destination cache at the destination IPA in a forwarding and routing table the association between the URL and the source IPA, the forwarding table for determining the source IPA from a URL request for forwarding and routing a request for web content data to the source IPA (col. 5 L25 to col. 6 L66: updating the caching table with new object id, col. 8 L37 to col. 9 L45, fig. 2a).

As per claims 1-4, 12, 14, 18 and 20, they do not teach or further define over the limitations in claims 8, 6, 9, 11, 15-17 and 19. Therefore claims 1-4, 12, 14, 18 and 20 are rejected for the same reasons as set forth in claims 8, 6, 9, 11, 15-17 and 19.

2. Claims 7, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jordan et al. (hereinafter Jordan, US Patent No. 6,438,652 B1) in view of Garcia-Luna-Aceves et al. (hereinafter Garcia, US 6,836,463 B2), and further in view of Bertis et al. (hereinafter Bertis, Us 6,092,100).

As per claim 7, Jordan in view of Garcia does not disclose the process wherein the originating url is selected from the group consisting of, an exact url identifier being an exact url comprising plurality of urls, a wildcard url identifier being a wildcard url comprising a plurality of url components a last url component of which being a wildcard component, and a coded url identifier being a coded url comprising a series of hashing codes of decomposed url being a decomposition of the url selected from the group consisting of either an exact url or a wildcard url each of which comprising a series of url components, the series of hashing codes being a sequence of hashing codes of respective urls segments of a respective series of increasingly concatenated url components of the series of url components of the url.

Bertis explicitly discloses the process wherein the originating url is selected from the group consisting of, an exact url identifier being an exact url comprising plurality of urls (fig. 4 item #65, 67, fig. 5 item #96, 98), a wildcard url identifier being a wildcard url comprising a plurality of url components a last url component of which being a wildcard component (fig. 6 item #110), and a coded url identifier being a coded url comprising a series of hashing codes of

decomposed url being a decomposition of the url selected from the group consisting of either an exact url or a wildcard url each of which comprising a series of url components, the series of hashing codes being a sequence of hashing codes of respective urls segments of a respective series of increasingly concatenated url components of the series of url components of the url (fig. 6 item #114, 116, fig. 7A, col. 2 L59 to col. 3 L12).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Jordan in view of Garcia, and further in view of Bertis in order to select the exact url from a group consisting of exact url, wildcard url, and hash codes of the respective exact urls.

One of ordinary skilled in the art would have been motivated because it would have provided a mechanism for efficiently searching the urls (Bertis, col. 2 L50-67).

As per claims 10 and 13, they do not teach or further define over the limitations in claim 7. Therefore claims 10 and 13 are rejected for the same reasons as set forth in claim 7.

Additional References

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Inohara et al., US 6,256,747 B1: Managing distributed servers.
- b. Garcia-Luna-Aceves et al., US 2002/0004846 A1: Locating Closest server using URL.
- c. McCanne, US 6,785,704 B1: Content Distribution system.
- d. Lowery et al., Us 2002/0107934 A1: Dynamic Distributed data caching.

- e. Grove et al., US 6,820,133 B1: High performance delivery of web content.
- f. Murai et al., US 6,539,000 B1: Multicast communication method and apparatus:
See fig. 12-13.
- g. Imai et al., US 6,862,279 B1: Multicast distribution system of packets: See fig. 2.

Conclusion

The teachings of the prior art should not be restricted and/or limited to the citations by columns and line numbers, as specified in the rejection. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner, in order to move prosecution forward.

In the case of amendments, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and support, for ascertaining the metes and bounds of the claimed invention.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is (571)272-5863. The examiner can normally be reached on Increased Flex Work Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kamal Divecha
Art Unit 2151.
/John Follansbee/
Supervisory Patent Examiner, Art Unit 2151